
वस्त्रादि — फ्लायर स्पिंडल्स — विशिष्टि
(पहला पुनरीक्षण)

**Textiles — Flyer Spindles —
Specification**
(First Revision)

ICS 59.120.10

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Price Group 5

FOREWORD

This Indian Standard (First Revision) was adopted by the Bureau of Indian Standards, after the draft finalized by the Textile Machinery and Accessories Sectional Committee had been approved by the Textiles Division Council.

Spindle is simply a support and drive element for the flyer. Mounted at its lower end in a bearing and the bobbin tube acts as neck bearing.

This standard was originally published in 1971. This revision has been made in the light of experience gained since its publication and to incorporate the following major changes:

- a) Title of the standard has been modified;
- b) Marking and packing clauses have been modified;
- c) Sampling clause has been incorporated; and
- d) References to Indian standards have been updated.

The composition of the committee responsible for the formulation of this standard is listed in Annex B.

For the purpose of deciding whether a particular requirement of this standard is complied with the final value, observed or calculated, expressing the result of a test or analysis, shall be rounded off in accordance with IS 2 : 2022 'Rules for rounding off numerical values (*second revision*)'. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

*Indian Standard***TEXTILES — FLYER SPINDLES — SPECIFICATION***(First Revision)***1 SCOPE**

This standard prescribes the requirements of flyer spindles for use in conjunction with speed frames having lifts from 200 mm to 350 mm.

2 REFERENCES

The standards listed in Annex A contain provisions which, through reference in this text, constitute provisions of this standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated in Annex A.

3 MANUFACTURE**3.1 Material**

High-carbon steel chosen from IS 1570 (Part 2) so as to achieve the degree of hardness as specified in 4.2.

3.2 Workmanship and Finish

Spindles shall be free from scars, cracks, traces of rust, burrs or any other surface defect. The spindles shall have a perfect smooth ground finish with roughness not exceeding $0.4 \mu\text{m Ra}$.

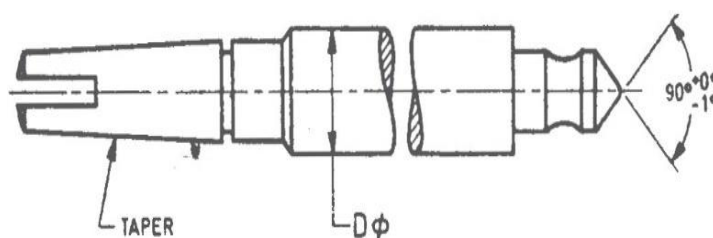
4 REQUIREMENTS**4.1 Shape and Dimensions**

FIG. 1 FLYER SPINDLE

<i>Lift</i> <i>mm</i>	<i>Dφ</i> <i>mm</i>
200	22
250	22
300	22
300	25
350	25

NOTE — Lift of flyer spindles is not generally determined on the basis of any of the spindle measurements but refers to the maximum distance travelled by the bobbin rail in the speed frame during formation of layers of rove on the bobbins.

4.1.1 Tolerances on the various dimensions shall be as under:

<i>Dimension</i>	<i>Tolerance (mm)</i>
Overall length	± 0.8
Body diameter	+ 0.00 - 0.05

4.2 Hardness

The hardness at tip of the spindle, as measured on Rockwell C scale according to the method prescribed in IS 1586 (Part 1) shall be 58 HRC, *Min.*

4.3 Trueness

The true running at any portion of the spindle shall be within 0.05 mm.

4.3.1 The trueness shall be determined by placing the spindle on V-blocks provided with dial indicators. The readings for outage shall be taken by rotating the spindle.

5 MARKING

5.1 Each container of spindles shall be marked with the following:

- Manufacturer's name, initials or trade-mark, if any;
- Name of the item;
- Number of spindles packed;
- Length and diameter of spindles;
- Gross and net mass;

- Lot/batch number;
- Country of origin; and
- Any other information required by the law in force and/or by the buyer.

5.2 BIS Certification Marking

The flyer spindles conforming to the requirements of this standard may be certified as per the conformity assessment schemes under the provisions of the *Bureau of Indian Standards Act*, 2016 and the Rules and Regulations framed thereunder, and the products may be marked with the Standard Mark.

6 PACKING

Each spindle shall be coated with anti-rust-proofing agent and wrapped in waxed paper. Suitable number of such spindles shall be packed in a wooden case lined with moisture-proof packing paper.

7 SAMPLING

7.1 Lot

In any consignment, the number of flyer spindles delivered to a buyer against a dispatch note, shall constitute a lot.

7.2 Unless otherwise agreed to between the buyer and the seller, the number flyer spindles to be selected for inspection, shall be according to col (2) and (3) of Table 1. The flyer spindles shall be selected at random. To ensure the randomness of selection, methods given in IS 4905 shall be followed.

Table 1 Sample Size and Permissible Number of Defectives
(Clauses 7.2 and 7.3)

Sl No.	Lot Size	Sample Size	Sub- Sample Size	Permissible Number of Defectives
(1)	(2)	(3)	(4)	(5)
i)	Up to 150	8	3	1
ii)	151 to 280	13	3	1
iii)	281 to 500	20	3	2
iv)	501 and above	32	5	3

7.3 Criteria for Conformity

The lot shall be considered conforming to the requirements if the following conditions are satisfied:

<i>Characteristic</i>	<i>Number of Samples</i>	<i>Criteria for Conformity</i>
Dimensions	According to col 3 of Table 1	Number of defective flats or screws shall not exceed the corresponding number given in col 5 of Table 1
Hardness and All other requirements	According to col 4 of Table 1	All flats meet the relevant requirements

ANNEX A
(Clause 2)

LIST OF REFERRED INDIAN STANDARDS

<i>IS No.</i>	<i>Title</i>
IS 1570 (Part 2) : 1979	Schedules for wrought steels: Part 2 Carbon steels (Unalloyed Steels)
IS 1586 (Part 1) : 2018	Metallic materials — Rockwell hardness test: Part 1 Test method (<i>fifth revision</i>)
IS 4905 : 2015	Random sampling and randomization procedures (<i>first revision</i>)

ANNEX B
(Foreword)

COMMITTEE COMPOSITION

Textile Machinery and Accessories Sectional Committee, TXD 14

<i>Organization</i>	<i>Representative(s)</i>
Central Manufacturing Technology Institute, Bengaluru	DR NAGAHANUMAIAAN (<i>Chairperson</i>)
ATE Enterprises Private Limited, New Delhi	SHRI ABHIJIT KULKARNI SHRI ANIL KUMAR SHARMA (<i>Alternate</i>)
Amritlakshmi Machine Works, Mumbai	SHRI N. K. BRAHMACHARI SHRI N. K. RAUT (<i>Alternate</i>)
Bhowmick Calculator, Kolkata	SHRI GOUTAM BHOWMICK SHRI VIVEKANANDA BHOWMICK (<i>Alternate</i>)
Central Manufacturing Technology Institute, Bengaluru	SHRI B. R. MOHANRAJ SHRI K. SARAVANAN (<i>Alternate</i>)
Confederation of Indian Textile Industry, New Delhi	SHRI AJAY KUMAR
Dashmesh Jacquard and Powerloom Private Limited, Panipat	SHRI RAJMEET DHAMMU
HLL Lifecare Limited, Noida	SHRI AKHIL G. S. SHRI RATNAKAR GUPTA (<i>Alternate</i>)
ICAR-Central Institute for Research on Cotton Technology, Mumbai	DR V. G. ARUDE DR T. SENTHILKUMAR (<i>Alternate</i>)
India ITME Society, Mumbai	SHRI PRASHANT MANGUKIA SHRIMATI SEEMA SRIVASTAVA (<i>Alternate</i>)
Indian Jute Industries Research Association, Kolkata	SHRIMATI SAUMITA CHOUDHURY SHRI PARTHA SANYAL (<i>Alternate</i>)
Indian Textile Accessories and Machinery Manufacturers Association, Mumbai	SHRI N. D. MHATRE SHRI CHANDRESH SHAH (<i>Alternate</i>)
Inspiron Engineering Private Limited, Ahmedabad	SHRI SANJAY KOWARKAR SHRI PRATYUSH B. CHAUKASE (<i>Alternate</i>)
JCB Industries, Guwahati	SHRI DHRUBA SARMA SHRI ABHIJIT BHUYAN (<i>Alternate</i>)
Kusters Calico Machinery Limited, Karjan	SHRI DEVANG PARIKH SHRI SHUBHASIS SUR (<i>Alternate</i>)
Lakshmi Machine Works Limited, Coimbatore	SHRI V. LAKSHMI VARADHARAJAN
Laxmi Shuttleless Looms Private Limited, Ahmedabad	SHRI KETAN SANGHVI
Man Made Textiles Research Institute, Surat	DR S. K. BASU
Ministry of Heavy Industries and Public Enterprises, Department of Heavy Industry, New Delhi	SHRI SNAJEEV GUPTA SHRI S. SUNDAR (<i>Alternate</i>)
National Safety Council, Navi Mumbai	SHRI LALIT R. GABHANE SHRI R. R. DEOGHARE (<i>Alternate</i>)
Office of the Textile Commissioner, Mumbai	SHRI C. R. KALESAN SHRI JAGRAM MEENA (<i>Alternate</i>)
Peass Industrial Engineers Private Limited, Navsari	SHRI RAVI S. RAO SHRI JIGNESH B. PATEL (<i>Alternate</i>)
Technocraft Industries India Limited, Mumbai	SHRI RAVINDER KUMAR SHRI DURADUNDESHWAR HIEMATH (<i>Alternate</i>)

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Textile Machinery Manufacturers Association, Mumbai	SHRI M. SHANKAR SHRI PRASHANT MANGUKIA (<i>Alternate</i>)
The Bombay Textile Research Association, Mumbai	SHRI VIJAY GAWDE SHRI R. A. SHAIKH (<i>Alternate</i>)
The Synthetic and Art Silk Mills Research Association, Mumbai	DR MANISHA MATHUR SHRI SANJAYA SAINI (<i>Alternate</i>)
The Textile Association (India), Mumbai	SHRI J. B. SOMA SHRI ASHOK JUNEJA (<i>Alternate</i>)
Truetzschler India Private Limited, Ahmedabad	SHRI PRAVIN KANDGE SHRI SHILADITYA JOSHI (<i>Alternate</i>)
United Nations International Children's Emergency Fund, New Delhi	DR PRATIBHA SINGH SHRI YUSUF KABIR (<i>Alternate</i>)
Veermata Jijabai Technological Institute, Mumbai	DR SURANJANA GANGOPADHYAY SHRI S. P. BORKAR (<i>Alternate</i>)
BIS Directorate General	SHRI J. K. GUPTA, SCIENTIST 'E'/DIRECTOR AND HEAD (TEXTILES) [REPRESENTING DIRECTOR GENERAL (<i>Ex-officio</i>)]

Member Secretary
SHRI SWAPNIL
SCIENTIST 'B'/ASSISTANT DIRECTOR
(TEXTILES), BIS

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Amendments Issued Since Publication

Amend No.	Date of Issue	Text Affected

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